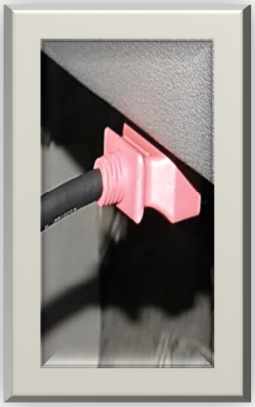
ADEQ
Arizona Department of Environmental Quality

Government Entity & Fleet Shop Fleet Station Handbook Area A (Metro Phoenix)



Information for Fleet Station Personnel

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REVISION 4-2015

Introduction

This handbook describes the fleet emissions inspection station requirements for all entities other than licensed motor vehicle dealers. Contained within are: Summarizations of the fleet emissions inspection station permitting and inspector licensing processes; lists of required inspection equipment and equipment maintenance/calibration standards; inspection procedures for specific classes of vehicles; record keeping procedures. The handbook was developed from laws and regulations found in Arizona Revised Statutes Title 49, Chapter 3, Article 5, and Arizona Administrative Code, Title 18, Chapter 2, Article 10.

Permits are issued after the Department has found that the company:

1. Maintains an established place of business for the repair and maintenance of the applicant's fleet of vehicles

2. Has approved machinery, tools and equipment to adequately conduct the required emissions inspections

3. Employs properly trained and licensed personnel to perform the necessary labor

4. Agrees to provide data as may be prescribed by the director

If you have any questions regarding this handbook, please call the Vehicle Emissions Inspection and Compliance Unit at (602) 771-3950, in Phoenix, or (520) 628-5651, ext. #0, in Tucson.

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A/T	AUTOMATIC TRANSMISSION
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AFV	ALTERNATIVE FUEL VEHICLE
AIS	AIR INJECTION SYSTEM
AREA "A"	METROPOLITAN PHOENIX EMISSIONS CONTROL AREA
AREA "B"	METROPOLITAN TUCSON EMISSIONS AREA
ARS	ARIZONA REVISED STATUTE
C	CERTIFIED TECHNICIAN ONLY
CARB	CALIFORNIA AIR RESOURCES BOARD
CAT	CATALYTIC CONVERTER
CC	CUBIC CENTIMETERS
CF	CERTIFIED NON-DIESEL FLEET INSPECTOR
CFD	CERTIFIED NON-DIESEL AND DIESEL FLEET INSPECTOR
CNG	COMPRESSED NATURAL GAS
CO	CARBON MONOXIDE
COI	CERTIFICATE OF INSPECTION
CYL	CYLINDER
DC	DIRECTOR'S CERTIFICATE
DLC	DIGNOSTIC LINK CONNECTOR
DTC	DIAGNOSTIC TROUBLE CODE
EGR	EXHAUST GAS RECIRCULATION
EPA	ENVIRONMENTAL PROTECTION AGANCY
EVAP	EVAPORATIVE EMISSIONS SYTEM
FD	DIESEL FLEET INSPECTOR (CERTIFIED)
FVIR/MS	FLEET VEHICLE INSPECTION REPORT/MONTHLY SUMMARY
GVCOI	GOVERNMENT VEHICLE CERTIFICATE OF INSPECTION
GVWR	GROSS VEHICLE WEIGHT RATING
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HP	HORSE POWER
IM 147	TRANSIENT LOADED TEST PERFORMED ON 1981 THROUGH 1995 LIGHT DUTY VEHICLES
INSP	INSPECTOR
KOEO	KEY "ON" ENGINE "OFF"
KOER	KEY "ON" ENGINE "RUNNING"
LBS	POUNDS
LNG	LIQUIFIED NATURAL GAS
LPG	LIQUIFIED PETROLEUM GAS
M/T	MANUAL TRANSMISSION
MIL	MALFUNCTION INDICATOR LIGHT
N/A	NOT APPLICABLE
NDIR	NONDISPERSIVE INFRA RED
NOx	OXIDES of NITROGEN

OBD	ON BOARD DIAGNOSTICS
OPAC	OPACITY
P	PASS
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PPM	PARTS PER MILLION
PSI	POUNDS PER SQUARE INCH
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SAE J1978-SAE J1979	SOCIETY OF AUTOMOTIVE ENGINEERS RECOMMENDED PRACTICE-SCAN TOOL REQUIREMENTS
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VEI (P) OR (T)	VEHICLE EMISSIONS INSPECTION (P) PHOENIX OR (T) TUCSON

Section I

Fleet Station Permits
(For all fleets, except motor vehicle dealers)

A. Fleet Station Facility and Personnel Requirements:

Permitted fleet emissions inspection stations must meet the following requirements:

1. The permitted facility must be exclusively owned or leased by the applicant and located inside Area A as defined in Arizona Revised Statutes § 49-541(1).

2. The applicant must own or lease at least 25 non-exempt vehicles.

3. The facility must have a space specifically dedicated to maintaining or repairing at least one fleet vehicle.

4. The applicant must employ a fleet agent who is in charge of day to day operations of the fleet. The fleet agent can be the applicant or a designated employee.

5. The fleet must employ a licensed emissions inspector to perform inspections of fleet owned vehicles. The licensed inspector must be certified to inspect for the types of vehicles owned or leased by the fleet (the fleet agent and inspector can be the same person).

6. The applicant or employee(s) must own or lease equipment necessary to perform all aspects of the required inspections.

7. The applicant must agree to provide data to The Department as prescribed by The Director.

B. Fleet Permit Suspension or Revocation:

Fleet station permit does not expire. However, the fleet permit can be suspended, revoked, or civil penalties may be imposed, if the fleet owner or employees:

1. Violate any provision of Arizona Revised Statute Title 49, Chapter 3, Article 5 or Arizona Administrative Code Title 18, Chapter 2, Article 10;

2. Misrepresent material facts in obtaining a fleet permit;

3. Fail to make, keep and submit pertinent records to The Department;

4. Fail to provide a state inspector access to the information required by law.

C. Types of Fleet Permits and Emissions Inspection Equipment Requirements:

Fleet permits are issued to a fleet service shop for the inspection of specific vehicles by class.

1. **Constant four-wheel drive vehicles** (including vehicles equipped with traction control that cannot be disabled) require the following equipment to perform a **curb idle test:**

    - A non-dispersive infra-red CO and HC emissions analyzer that is equipped with a water trap in the sampling line capable of taking undiluted exhaust samples from the vehicle exhaust system;

    - Pressure test equipment for the functional gas cap test capable of determining that gas cap leakage does not exceed 60cc per minute at 30 inches of water gauge;

    - An ignition-operated tachometer.

2. **1980 and older vehicles, 1981 and newer heavy-duty vehicles** (8501 lbs GVWR or greater), and **all school district alternative fuel vehicles** need the same equipment as required to perform the curb idle test, as well as **a <u>dynamometer</u>** to perform **a loaded cruise test.**

3. **1996 and newer light-duty vehicles**, (8500 lbs GVWR or less) **including original equipment manufactured alternative fuel vehicles that cannot be manually switched** require the following equipment to perform the **On-Board Diagnostic (OBD)** inspection and functional gas cap test:

    - **A scan tool used to perform the OBD test that complies with SAE J1978 and J1979 as follows:**

    - **<u>SAE J1978</u> Describes the basic functions the OBD scan tool must support;**

        - **Automatic hands-off determination of the communications protocol.**
        - **Obtaining and displaying the status and results of the vehicle on-board diagnostic evaluations (supported and completed readiness test and malfunction indicator lamp (MIL) status.**
        - **Obtaining and displaying the following:**
            - **Diagnostic Trouble Codes DTC's.**
            - **Emissions related current data (engine parameters).**
            - **Emissions related freeze frame data.**
            - **Latest test parameters and results.**
            - **Other emissions-related test parameters and results described in SAE J1979.**
            - **Clearing stored emissions related DTC's, freeze frame data, and diagnostic test results.**

- **<u>SAE J1979</u> Describes diagnostic test modes for emissions related diagnostic data that is displayed by all scan tools as follows:**

  - **<u>MODE #1</u> - Request for current power-train diagnostic data including: engine parameters, MIL status, and readiness codes.**
  - **<u>MODE #2</u> - Request for power-train freeze frame data.**
  - **<u>Mode #3</u> - Request emissions-related power-train diagnostic trouble codes (DTC's)**
  - **<u>Mode #4</u> – Clear/Reset emissions-related diagnostic information including MIL status, DTC's, Freeze Frame and Readiness Codes.**
  - **<u>Mode #5</u> – Request oxygen sensor monitor test results.**
  - **<u>Mode #6</u> – Request latest on-board monitoring test results for non-continuous monitoring systems (i.e. Catalyst, EGR, evaporative system, etc…).**
  - **<u>Mode #7</u> – Request latest on-board monitoring test results for continuous monitoring systems (i.e. Fuel trim, misfire, comprehensive components).**

Also required:

- Pressure test equipment for the functional gas cap test capable of determining that gas cap leakage does not exceed 60cc per minute at 30 inches of water gauge.

4. **1967 and newer light-duty diesel vehicles** (8500 lbs GVWR or less) require the following equipment to perform the **steady state loaded mode test**:

   - A dynamometer capable of loading the vehicle;

   - A full flow or sampling type opacity meter.

5. **1967 and newer heavy-duty diesel vehicles** (8501 lbs GVWR and greater) require equipment to perform the **snap-acceleration test** according to Society of Automotive Engineers Recommended Practice J1667

D. General Fleet Station Requirements:

The following requirements apply to **all fleet stations**:

1. The fleet permit along with licenses of agents and inspectors employed by the fleet must be prominently displayed within the facility.

2. Whenever an inspector starts or ends employment with a fleet, the fleet station must notify The Department **in writing within 7-days of the change in employment status.** (Written notification can be done by mail; however the preferred method is e-mail or fax). **The written notification must include; the name and license number of the vehicle emissions inspector; a statement declaring the employment change; the effective date of the employment change.**

   If the fleet's only licensed inspector leaves the employment of the fleet station the fleet must; immediately cease operating as a fleet inspection station; immediately notify The Department by phone of the change in employment status; within 7-days, notify The Department in writing and surrender all unused certificates of inspection to The Department for a refund.

3. Whenever a fleet agent is hired, terminated or resigns, the fleet owner must do the following, when applicable:

   a. When a fleet agent is hired, the fleet must notify The Department within 7-days of the designation of a new fleet agent. This will require the fleet owner to submit a completed "Fleet Agent Designation" form (see attachment).

   b. When a fleet agent is terminated or resigns, and **there is no qualified individual** to assume the responsibility of day to day operations, the fleet must; immediately cease operations as a fleet station; immediately notify The Department by phone; notify The Department in writing within 7-days of the change in employment status.

   c. When a fleet agent is terminated or resigns, and **there is a qualified individual** (someone who has passed the fleet agent/inspector exam) to assume the responsibility of day-to-day operations, the fleet must notify The Department within 7-days of the designation of a new fleet agent. This will require the fleet owner to submit a completed "Fleet Agent Designation" form (see attachment).

4. The fleet permit is only applicable to the fleet's inspection facility located at the address on the permit. Additional facilities require separate permits. A permitted facility that changes its name or address, but retains the same fleet ownership, is required to return the permit to The Department and submit a new permit application. The Department will cancel the returned permit and issue a new permit with the updated information.

5. A duplicate permit for one that has been lost, destroyed or mutilated may be obtained by providing a letter of explanation with a request for replacement (include damaged permit, if applicable. **A new permit application must also be submitted.** If a duplicate permit is issued and the lost permit is later located, the dealer fleet station must immediately return the original to The Department.

Section II

Fleet Agent & Inspector Licensing

A. Licenses:

There are four types of vehicle emissions inspector licenses that pertain to permitted fleet facilities. These licenses are designated as follows:

"A" Fleet Agent
"CF" Non-Diesel Vehicle Inspector
"FD" Diesel Vehicle Inspector
"CFD" Non-Diesel and Diesel Vehicle Inspector

To obtain a license, the applicant must take and pass the appropriate examination(s) relating to the inspector license. Applicants must pass all tests with a minimum correct score of 80 percent.

1. "A" License requires the applicant to pass the Fleet agent/inspector examination (25 Questions)

2. "CF" License requires the applicant to pass the following tests:
   - Certified technician examination (40 Questions)
   - Fleet agent/inspector examination (25 Questions)
   - Non-diesel inspector examination (25 Questions)

3. "FD" License requires the applicant to pass the following tests:

   - Certified diesel technician examination (40 Questions)
   - Fleet agent/inspector examination (25 Questions)
   - Diesel inspector examination (25 Questions)

4. "CFD" License requires the applicant to pass the following tests:

   - Certified technician examination (40 Questions)
   - Certified diesel technician examination (40 Questions)
   - Fleet agent/inspector examination (25 Questions)
   - Non-diesel inspector examination (25 Questions)
   - Diesel inspector examination (25 Questions)

B. Certification Testing Options:

1. Attending the Fleet Certification Class:

Once each month The Department holds a fleet certification class at the Vehicle Emission's office located at 1110 West Washington Street in Phoenix. This class is presented for **government and fleet shop personnel seeking the "CF", "CFD" or "FD" license**. The class curriculum covers basic non-diesel and diesel emission control systems, theory and diagnosis, as well as applicable fleet station laws and regulations. If you have not attended a class in the last couple of years, it may be beneficial to do so as you may not be aware of some of the latest program changes. Applicants planning to attend the class should register at least 60-days in advance to ensure seating availability. Upon completion of the fleet certification class, applicants should be able to pass all examinations. To register, call our office at (602) 771-3950, or send an e-mail to one of the following: am3@azdeq.gov , at2@azdeq.gov .

2. Challenging the Test:

The Department allows for applicants to challenge the tests and bypass the fleet certification class. Tests can be challenged by appointment ONLY (excluding holidays) at the Vehicle Emissions Office located at 1110 West Washington Street, Phoenix, Arizona 85007. Please call our office at (602) 771-3950 or send an e-mail to one of the following: am3@azdeq.gov , at2@azdeq.gov .

If an applicant for a vehicle emissions inspector license fails the written examination, the applicant shall successfully complete the vehicle emissions inspector fleet certification class before re-examination for obtaining a license.

3. Inspector License Renewal and Expiration:

To retain the current license expiration date, the inspector must renew the license within 30-days before the expiration date. If the license is allowed to expire, the license expiration will be changed to one year from the date the inspector passed all required examinations. All required examinations must be passed within 60-days of the initial test.

C. Change of Employment Status Inspector and Agent Notification Requirements:

A vehicle emissions inspector is required to notify The Department of any change in employment status due to hiring, retirement, resignation, or termination **within 7-days** of such a change. Please call (602) 771-3950. In addition, the fleet owner or agent is required to notify The Department in writing within 7-days. Written notification may be mailed to 1110 West Washington Street, Phoenix, Arizona 85007; sent by fax to (602) 207-7020; or e-mailed to *alo@azdeq.gov or am3@azdeq.gov or at2@azdeq.gov* .

The **responsibility** of notifying The Department if a fleet agent is hired, retires, resigns or is terminated falls solely on the Director of Maintenance or Operations. The fleet agent is not required to notify The Department.

D. Inspector License Revocation

The Department may suspend, revoke, or refuse to renew a license if the licensee has violated any provision of Arizona Revised Statutes Title 49, Chapter 3, Article 5, or Arizona Administrative Code Title 18, Chapter 2, Article 10. In addition, an inspector license may be suspended, revoked, or refused to be renewed if the inspector fails to demonstrate proficiency to The Department regarding vehicle emissions inspection procedures.

Section III

Fleet Station & Licensed Inspector Auditing

Permitted fleet facilities and inspectors are subject to periodic audits by The Department to ensure that emissions inspection and documentation procedures are being followed. Outlined below are the audit types, and the minimum required frequency of each audit.

1. Fleet motor vehicle compliance with emissions inspection requirements, at least annually;
2. Licensed inspector performance at least twice annually;
3. Fleet Station emissions inspection records, monthly as submitted to The Department;
4. Analyzer and/or Opacity Meter, every 90 days;
5. Scan Tool, at least twice annually.

Section IV

Equipment Maintenance, Calibration & Auditing Requirements

A. Requirements for Non-Diesel Equipment (analyzer):

1. All equipment and testing instruments must be maintained in accurate working condition as specified by the manufacturer. Instruments that require a periodic calibration must be calibrated according to the instructions and recommendations of the instrument or equipment manufacturer.

2. To maintain registration, non-dispersive infra-red CO and HC analyzers must be checked with approved calibration gases **at least monthly by a certified technician. The record of the calibration check and any repairs performed must be documented on the analyzer's repair and calibration history log (VE-160).**

   - The approved calibration gas will contain a blend of hexane (300 parts per million) and carbon monoxide (1.5 percent) or hexane (300 parts per million), carbon monoxide (1.5 percent), and carbon dioxide (5.0 percent), or the manufacturer's recommended calibration gas.

   - The analyzer must read the calibration gas within the following tolerances:
     CO -0.25% to +0.50 % in the range from 0 to 2% (Low Scale)
     HC -30 ppm to +60 ppm in the range from 0 to 500 ppm (Low Scale)

   - The monthly calibration check should include an inspection of the analyzer's sampling and filtration systems

   - An analyzer that does not read within the tolerances specified above or has leaks or restrictions in the sampling or calibration systems, must be removed from service and cannot be used to perform official emissions inspections until repairs are performed and the analyzer passes a calibration check.

3. **At least every 90 days**, The Department will conduct a state calibration audit. The Department may also perform unscheduled audits for analyzer accuracy. The repair and calibration history log (VE-160) must be available to a state inspector during an audit. During a state calibration audit the analyzer must read within following tolerances.

   CO -0.25% to +0.50 % in the range from 0 to 2% (Low Scale)
   CO -0.50% to +1.0 % in the range from 0 to 10% (High Scale)

   HC -30 ppm to +60 ppm in the range from 0 to 500 ppm (Low Scale)
   HC -100 ppm to +200 ppm in the range from 0 to 2000 ppm (High Scale)

4. An analyzer that does not read within the state calibration audit tolerances will be "red tagged," and cannot be used by the fleet for official emissions inspection until all the following requirements are met:

    a. The analyzer has been properly repaired;
    b. The analyzer has passed a state calibration audit or vendor calibration audit performed by a certified equipment repair technician, (analyzers repaired by the manufacturer or out of state repair facility must pass a state calibration audit);
    c. The red tag has been removed by a state inspector or certified equipment repair technician.

B. Requirements for Non-Diesel Equipment (Scan Tool):

1. All equipment and testing instruments must be maintained in accurate working condition as specified by the manufacturer. Instruments that require a periodic calibration must be calibrated according to the instructions and recommendations of the instrument or equipment manufacturer.

2. To maintain registration, a scan tool must be updated as per the manufacturer recommendations.

    - A Scan Tool that does not operate properly, or is otherwise outdated for the vehicle year and type requirement, must be removed from service and cannot be used to perform official emissions inspections until repairs or upgrades are performed and the scan tool meets J1979 requirements.

3. **At least twice annually**, The Department will conduct a state audit. The Department may also perform unscheduled audits for scan tool accuracy.

4. A scan tool that does not read within the parameters of J1978 and J1979 will be "red tagged," and cannot be used by the fleet for official emissions inspection until all the following requirements are met:

    a. The scan tool has been properly repaired or upgraded;
    b. The scan tool has passed a state audit, (scan tools repaired by the manufacturer or out of state repair facility must pass a state audit);
    c. The red tag has been removed by a state inspector or a certified equipment repair technician

C. Requirements for Diesel Equipment (Opacity Meter):

1. All equipment must be maintained in accurate working condition as specified by the manufacturer. Instruments requiring a periodic calibration must be calibrated according to the instructions and recommendations of the instrument or equipment manufacturer.

2. To maintain registration, the calibration of an opacity meter must be checked **before performing the first emissions inspection of any month. The record of the calibration check and any repairs performed must be documented on the opacity meter's repair and calibration history log (VE-160).**

   - The opacity meter must be checked using a neutral density filter.
   - The opacity meter must read the filter within **± 5 opacity** of the filter value.
   - The monthly calibration check should include an inspection of the opacity meter's optics and cables.
   - An opacity meter that does not read within the tolerance specified above must be removed from service and cannot be used to perform emissions inspections until repairs are performed and the meter passes a calibration check.

3. **At least every 90 days**, The Department will conduct a state calibration audit. The Department may also perform unscheduled audits for opacity meter accuracy. The repair and calibration history log (VE-160) must be available to a state inspector during an audit. During a state calibration audit the opacity meter must read the state inspector's filter within **± 5 opacity** of the filter value.

4. An opacity meter that does not read within the state calibration audit tolerance will be "red tagged," and cannot be used by the fleet for official inspections until all of the following requirements are met:

   a. The opacity meter has been properly repaired;
   b. The opacity meter has passed a state calibration audit or a vendor calibration audit performed by a certified equipment repair technician;
   c. The red tag has been removed by a state inspector or certified equipment repair technician.

Note:
"Red Tagged" equipment that is sent out of state for repair must pass a state calibration audit before it can be used for an official emission inspection.

Section V

Time of Inspection, Required Inspections, & Inspection Procedures

Government vehicles, unless exempt (see Section VII), **require inspection annually (with the exception of OBD vehicles)**. If not exempt, inspections are required within 12-months after **acquisition**. Vehicles no longer eligible for the new vehicle exemption must be tested **within 90-days following the anniversary of their date of acquisition.** Annual inspections thereafter are required during or before the anniversary month of the last inspection; **biennial (every two-years) inspections for an OBD tested vehicle.**

Privately owned vehicles (fleet shop) **require inspection annually (with the exception of OBD vehicles)**. Inspections are required at least once within each 12 month period following registration, unless exempt under the new vehicle exemption; **biennial (every two-years) inspections for an OBD tested vehicle.**

The detailed procedures for each type of inspection/test required are as follows:

A. Curb Idle Test:

The curb idle test measures the exhaust emissions with the vehicle stopped and the engine idling at manufacture's specification ± 100 RPM. **The curb idle test is performed with the foot brake applied and a tachometer connected to determine ± 100 RPM's of manufacturer specified idle (if applicable).**

- 1967 through 1980 model year vehicles equipped with an **automatic transmission**, shall be tested in **drive**.
- 1967 through 1980 model year vehicles equipped with a **manual transmission**, shall be tested in **neutral**.

To perform the curb idle test**, insert the exhaust sample probe 8 to12 inches** into the exhaust pipe. Record the HC and CO readings after the readings have stabilized or at the end of **90** seconds, whichever occurs first.

For all constant 4WD/undefeatable traction system vehicles record the HC and CO readings after the readings have stabilized or at the end of **30** seconds, whichever occurs first.

If a vehicle is equipped with multiple exhaust pipes and the analyzer is not capable of sampling multiple pipes the test must be performed separately on each exhaust pipe. Record the HC and CO readings for each exhaust pipe and obtain an average. Compare the average results to the maximum allowable.

If the vehicle's emissions are above the standard, the engine may be preconditioned by operating it at 2500 rpm ± 300 RPM for up to a maximum of **30** seconds. After preconditioning, return the engine speed to curb idle and perform a second idle test. If the emissions levels are below the standard, the vehicle passes the curb idle test. If the vehicle's emissions levels still exceed the maximum allowable, the vehicle fails inspection and repairs are required.

B. Curb Idle/Steady State Loaded Cruise Test:

When performing the curb idle portion of the test, on a 1981 model year and newer vehicle, the vehicle's **transmission** must be in **neutral with the foot brake applied**, regardless of transmission type.

To perform the curb idle test, **insert the exhaust sample probe 8 to 12 inches** into the exhaust pipe. Record the HC and CO readings after the readings have stabilized or at the end of **90** seconds, whichever occurs first. If the vehicle's emissions are above the standard, the test may be performed again after the loaded cruise test.

The loaded cruise test measures the exhaust emissions while the vehicle is driven on a dynamometer with a load applied to the drive tires. The **exhaust probe must be inserted 8 to 12 inches** into the exhaust pipe. If the vehicle is equipped with an automatic transmission, the appropriate gear for this test is "Drive" (Do not use "Overdrive"). For vehicles equipped with a manual transmission, select the appropriate gear for speed and load. Use the chart below to determine the appropriate speed and load. Accelerate until the proper MPH is achieved and hold the speed steady. Apply a load using the dynamometer. Record the HC and CO readings once they have stabilized or at the end of **90** seconds, whichever occurs first.

If a vehicle is equipped with multiple exhaust pipes and the analyzer is not capable of sampling multiple pipes the test must be performed separately on each exhaust pipe. Record the HC and CO readings for each exhaust pipe and obtain an average. Compare the average results to the maximum allowable.

Loaded Cruise Test Dynamometer Loading Table

GVWR	Number of Cyl's	Speed (MPH)	Load (HP)
8500 or less	4 Cyl. or less	22 to 25	2.8 to 4.1
8500 or less	5 or 6 Cyl.	29 to 32	6.4 to 8.4
8500 or less	8 or more	32 to 35	8.4 to 10.8
8501 or more	All	37 to 40	12.7 to 15.8

Note:
Follow manufacturer recommendations when testing Hybrid vehicles. (Create a load by energizing A/C system, etc…)

C. Onboard Diagnostic (OBD) Test:

The OBD test interrogates the vehicle's computer system to determine emissions compliance and does not include exhaust sampling.

The test consists of verifying the operation of the malfunction indicator lamp (MIL); confirming that the appropriate readiness monitors are set; visually inspecting the diagnostic link connector (DLC); determining if the MIL is commanded "ON"; recording diagnostic trouble codes (DTC).

The OBD Test process is as follows:

1. Turn the ignition to the "Key On Engine Off" (KOEO) position and observe the MIL; the MIL must be lit. This portion of the test verifies MIL operation and is commonly referred to as the "bulb check"; **MIL On = Pass**; proceed to Step 2. MIL Off = fail, perform necessary repairs and re-inspect.

2. Locate the DLC and inspect for tampering (missing, loose, or damaged). If the **DLC passes the tampering inspection**; proceed to Step 3. If the vehicle fails the DLC tampering inspection, do not proceed, perform repairs as needed.

3. Connect an SAE J1979 compliant scan tool (see Section 1C3 for requirements) to the DLC. Turn ignition to the "Key On Engine Running" (KOER) position and observe the MIL. The MIL should light and then go out during this part of the test. If the **MIL stays off** with the vehicle in the **"KOER" position the vehicle is a pass**; proceed to Step 4. If the MIL stays on; the vehicle fails, perform repairs and re-inspect.

4. The scan tool must be used in the generic OBD mode for this portion of the test; follow the scan tool manufacturer's instructions to determine the following:

    - Readiness Monitor Status: **1996 through 2000 model year vehicles** are allowed **two or fewer unset readiness monitors** for a valid test. **2001 and newer model year vehicles** are allowed **one or less unset readiness monitors** for a valid test. If monitor requirements are not met, the vehicle must be driven through the appropriate drive cycle(s) until the required monitors are set.

    - **Observe the MIL status command** on the scan tool to determine if the vehicle computer is commanding the MIL to be on or off. If the **MIL is commanded off the vehicle passes**; proceed to Step 5. If the MIL is commanded on the vehicle fails; repair and re-inspect.

5. Perform the functional gas cap test. See Section V "Fleet Test Procedures" (F).

D. Liquid Fuel Leak Test

"Liquid Fuel Leak" means any fuel emanating/discharging in liquid form that has created an obvious dripping, pooling or puddle on, around or under components of the vehicle's engine, evaporative system, fuel metering or delivery system.

The liquid fuel leak inspection is a visual inspection only, and is performed on **1975 through 1995 model year vehicles that are required to take the idle and/or idle and steady state loaded cruise test (except for diesel powered vehicles, and dedicated AFV vehicles that operate exclusively on CNG, LNG, LPG).** The vehicle emissions inspector is not required to perform any disassembly of the vehicle to inspect for liquid fuel leaks. No special tools or equipment, other than a flashlight and mirror, are required and no raising, hoisting, or lifting of the vehicle is required.

The inspection procedure is as follows:

1. The vehicle emissions inspector shall visually inspect for obvious liquid fuel leaks in the general area of the following components: **(This is performed with the vehicle engine running)**

    - Gasoline fuel tanks, fill pipes and caps;
    - External fuel pumps;
    - Fuel delivery and return lines and hoses;
    - Fuel filters;
    - Carburetors (if equipped);
    - Fuel injectors;
    - Fuel pressure regulators;
    - Charcoal/Evaporative canisters; and related hoses

E. Visual Gas Cap Inspection:

The visual gas cap inspection consists of verifying that the vehicle has a properly fitting gas cap. The **visual inspection is performed** on vehicles that were manufactured **without evaporative control systems.** This includes most 1970 and older vehicles, and many 1984 and older federal heavy-duty trucks. These vehicles were designed to vent fuel tank vapors into the atmosphere.

F. Functional Gas Cap Test:

The functional gas cap test determines if the gas cap properly seals, preventing fuel vapor (hydrocarbons) from escaping into the atmosphere. This test consists of attaching the gas cap to a testing unit that applies pressure and monitors air flow or leakage. Maximum allowable leakage is 60 cubic centimeters per minute at 30 inches of water.

Note:
Many 1970 and newer heavy-duty vehicles certified to meet California emission requirements were **equipped with evaporative control systems and are subject to a functional gas cap test.**

Note:
Some vehicles are manufactured/designed without a gas cap (usually have a yellow ring around the nozzle that states "NO CAP".

G. Equipment Tampering:

An equipment tampering inspection is performed on all 1975 model year and newer vehicles (with the exception of OBD tested vehicles). The tampering inspection is based on the **original configuration of the vehicle as manufactured** and consists of the following:

1. A visual inspection to determine the presence and proper installation of each required **Catalytic Converter** (if applicable as manufactured);

2. An examination to determine the presence of an **operational air injection system** (if applicable as manufactured);

3. A visual inspection to determine the presence of an **operational positive crankcase ventilation system** and **evaporative control system** (if applicable as manufactured);

The components shall be verified by referring to **"VEHICLE EMISSIONS CONTROL INFORMATION"** label. The **label** on many older vehicles may be **damaged, missing or unreadable**. Refer to an **emissions control application guide.**

H. Diesel Steady State Loaded Mode Test:

The steady state loaded mode test measures the opacity of the **light-duty diesel vehicle's (8500 lbs. GVWR or less)** exhaust emissions with the vehicle driven on a dynamometer. A load is applied to the drive tires. When using a partial flow opacity meter, follow the manufacturer's instructions and connect the meter to the exhaust pipe. When using a full flow opacity meter, center the read head perpendicular to the exhaust pipe**. The read head must be no further away from the exhaust pipe than the diameter of the pipe.** Accelerate the vehicle and apply load until the proper speed and load is reached (see chart below). **The exhaust must be sampled for a period of ten consecutive seconds**. If the vehicle has multiple exhaust pipes, **test each pipe and record only the results of the pipe emitting the highest opacity** readings. **Compare the results to the maximum allowable percentage (see chart in attachments).**

Loaded Opacity Test Dynamometer Loading Table

GVWR	Speed (MPH)	Load (HP)
4,000 or less	30	7.4 ± 1 HP (6.4 to 8.4)
4,001 to 8,500	50	30 ± 2 HP (28 to 32)

I. Diesel Snap-Acceleration Test (SAE J1667):
Performed on a heavy-duty diesel (8501 GVWR or more)

1. Prior to performing the diesel snap-acceleration test on heavy-duty diesel vehicles the following must be checked and verified:

   - The vehicle is safe to test;
   - The governor is operating;
   - The engine is at normal operating temperature;
   - No unusual noises, smoke or other conditions exist that could affect the accuracy of the test or indicate damage to the engine;
   - The engine brake is disabled;
   - The spring brake is deactivated. (On some vehicles, activating the spring brake disables the engine puff limiter which can increase opacity readings);
   - Prevent vehicle movement (chock wheels, if necessary)

2. The inspection process is as follows:

   - **Measure and record the exhaust pipe or stack diameter; if not available Engine Horse Power (HP) may be used. Record the ambient temperature, relative humidity and barometric pressure,** if the opacity meter does not have the capabilities to record the information automatically. **The information will be used to correct the opacity results.**
   - Perform **three clean-out snap accelerations** to remove any loose soot that may have accumulated in the vehicle's exhaust system.
   - **Within two minutes** of performing the clean-out snap accelerations, begin the **three official snap accelerations** using the same steps as used for clean-out.

   Snap accelerations are performed by:

   a. Quickly depress the **accelerator pedal to the wide open throttle position** until the engine reaches the maximum governed speed and hold for **one to four seconds.**

   b. Release the pedal and allow the **engine to return to idle** speed for a minimum of five, but **no longer than 45 seconds** before starting the next snap acceleration.

   c. If the vehicle is equipped with **multiple exhaust pipes**, visually compare the smoke levels and determine which **has the highest visual opacity**. Once determined, **perform the test on only that pipe**.

3. Test Validation:

   The snap acceleration test **must be validated** using the following criteria:

   - After completion of all snap accelerations, the **opacity meter is removed** from the exhaust pipe or stack. The meter **must read to within 2 opacity of zero.**

   - The mathematical difference between the high and low opacity results from the **three snap-acceleration test cycles must be within 5 opacity of each other** (see examples below).

Valid Test (difference 1%)	Invalid Test (difference 10%)
First snap test opacity result - 40%	First snap test opacity result - 35%
Second snap test opacity result - 41%	Second snap test opacity result - 41%
Third snap test opacity result - 40%	Third snap test opacity result - 45%

   Most opacity meters will perform this step and give the results automatically. For additional information, consult the opacity meter user manual.

4. Correction of Test Results for Ambient Conditions:

   The opacity reading must be corrected for ambient conditions such as air temperature, relative humidity and barometric pressure. The *Red Mountain opacity meter performs this function automatically. In addition, some *Cal-Test units will perform this function for correction, if the ambient conditions are provided. The *Wager and *Bosch units only provide the opacity reading which must be corrected with the formula specified in SAE J1667. A copy of SAE J1667 is on file with the Arizona Secretary of State and may be purchased from SAE on-line at www.sae.org.

5. Compare the Test Results to the Maximum Allowable Standards:

   When testing is complete, compare the results to the maximum allowable. The maximum allowable emissions standard for **1990 and older engines is 55% opacity**. The maximum allowable emissions standard for **1991 and newer engines is 40%** opacity.
   The engine year is determined by the emissions control label. If the emission control label is missing, illegible, or incorrect, the test standard shall be 40%, unless a correct, legible, emissions control label replacement is attached to the vehicle within 30-days of the inspection.

*__Non-endorsement of proprietary or other ADEQ reviewed products:__
The listing by ADEQ of any proprietary product or service is not an endorsement by ADEQ or the State of Arizona. ADEQ does not endorse, represent, guarantee, warranty or defend the use of any of the products or services you voluntarily sign up to provide information on, use, or receive. These product and service providers are a direct source unrelated to ADEQ or the State. Use of any listed product or service is at your risk and the State assumes no liability.

J. Diesel Visual Fuel Cap Inspection:

Verify the vehicle has a properly fitting cap. This is performed on all diesel vehicles regardless of year.

K. Diesel Equipment Tampering:

The equipment tampering inspection is performed on all 1975 model year and newer diesel vehicles. The diesel tampering inspection is based on the original configuration of the vehicle as manufactured and consists of the following:

1. A visual inspection to determine the presence and proper installation of each required **Catalytic converter** (if applicable as manufactured);

2. A visual inspection to determine the presence of an **operational positive crankcase ventilation system** (if applicable as manufactured);

The above components shall be verified by referring to the **"VEHICLE EMISSIONS CONTROL INFORMATION"** label.

L. Special Requirements for Heavy-Duty Diesel Powered Vehicles (as of 1/1/2004):

A diesel powered vehicle with a gross vehicle weight rating (GVWR) of more than **26,000 lbs.,** and for which **gross weight fees are paid,** are **not allowed to operate in area "A" unless the engine meets or exceeds 1988 EPA or CARB standards. Certificates of inspection shall not be issued to these vehicles.** Vehicles operated by religious institutions, school districts, and municipalities are exempt.

The owner of a vehicle listed above should contact the engine manufacturer to determine if the engine meets the applied standards. The manufacturer can provide a letter to The Department stating that the engine meets the applied standards. If the manufacturer is unable to provide the required endorsement, the owner may request one from a local dealer or manager of a certified shop that is familiar with EPA's engine standards for 1988 and newer engines. Phone numbers and web sites for engine manufacturers are listed in attachment at the back of this book (Diesel Manufacturer Website).

An inspection can be performed and a Certificate of Inspection issued after the engine complies with the EPA or CARB standards and has been documented with The Department.

Section VI

Alternative Fuel Vehicle (AFV) Requirements

A. Definition of Alternative Fuels

1. Alternative Fuels and fuel codes are defined as follows:

   - (L) Liquified petroleum gas (LPG or Propane)
   - (C) Compressed natural gas/liquified natural gas
   - (M) 70/30 minimum blend of alternative fuel and petroleum based fuel (except alcohol)
   - (A) Alcohol if used in a vehicle prior to August 21, 1998. After that, alcohol is no longer recognized as an alternative fuel by the State of Arizona. This includes M85 and E85 Flex Fuel vehicles

2. Bi-fuel AFV means a vehicle that is capable of operating on an alternative fuel and gasoline

3. Dedicated AFV means a vehicle that solely operates on an alternative fuel.

B. Testing Requirements for Alternative Fuel Vehicles:

New original equipment manufactured alternative fuel vehicles are **eligible for a current registration year plus <u>FOUR</u> previous year exemption**.

Bi-fuel alternative fuel vehicles must receive the appropriate test on each fuel independently. If a vehicle fails on one or both fuels, a complete re-inspection on each fuel must be performed.

An inspection of an AFV vehicle operating on **compressed natural gas or liquefied natural gas** requires the use of a correction factor of 0.61, to calculate the true hydrocarbon (HC) readings, when using an NDIR analyzer. The HC exhaust emissions must be multiplied by 0.61. Example: The HC emissions reading during the exhaust pipe emissions inspection is 100 ppm; the HC emissions recorded on the Fleet Vehicle Inspection Report/Monthly Summary would be 100 ppm, (100 X 0.61 = 61).

Section VII

Exempt Vehicles

The following vehicles are exempt from inspection requirements:

- A vehicle registered outside of Area "A" that is not used to commute to the driver's place of employment located inside Area "A"

- A 1966 model year and older vehicle
- A vehicle sold between motor vehicle dealers (wholesale)
- An Electrically powered vehicle (does not include hybrid vehicles)
- A vehicle with apportioned registration (vehicles registered in more than one state)
- A golf cart (gas or electric)
- A vehicle that is temporarily located out of state (call 602-207-7000)
- A vehicle with an engine displacement of less than 90 cubic centimeters

- A vehicle registered at the time of change of name of ownership **except when**:
  a. The change of ownership results from the sale by a dealership whose place of business is located in Area "A", or
  b. The change in registration is accompanied by the required fee for the year following expiration of the prior registration

- A vehicle registered with a current Director's Certificate
- **All Motorcycles**

- **<u>Original equipment manufactured alternative fuel vehicles of the current or four prior registration years</u>**

- A vehicle designed to operate exclusively on hydrogen

- **A vehicle of the current or four prior registration years, except:**
  a. A reconstructed vehicle (titled as a reconstruct or special construction);
  b. A vehicle failing an emissions inspection, whose owner elected to have the vehicle tested rather than opt out.

Section VIII

Procedure for Completing the Fleet Vehicle Inspection Report/Monthly Summary (FVIR/MS)

A sufficient number of the FVIR/MS forms will be provided at no charge when certificates of inspection or government vehicle certificates of inspection are purchased or as needed. Additional FVIR/MS forms may be obtained by visiting The Department at 1110 West Washington Street, Phoenix, Monday through Friday from **8:00 a.m. to 4:00 p.m.,** excluding state holidays.

A. General Rules for Completing the FVIR/MS:

The following rules apply to the completion of the FVIR/MS:

1. The FVIR/MS can only be completed for vehicles that have **passed** the required inspection;
2. The FVIR/MS must be **completed at the time of inspection**;
3. The FVIR/MS can only be completed and signed by the inspector performing the inspection;
4. All sections of the FVIR/MS must be completed. When completing items that do not apply to a particular vehicle, **enter N/A in the space provided.**

B. Procedure for Completing the FVIR/MS:

After the vehicle has passed the required emissions inspection, obtain the FVIR/MS currently in use and record the applicable information for the inspection performed **(see legend in back of book):**

1. **All Non-diesel vehicles** and **light-duty diesel vehicles** (GVWR 8,500 lbs. or less):
    1. Certificate of inspection number
    2. Inspection date
    3. License plate number (if applicable)
    4. Vehicle identification number
    5. Vehicle make - (Chevrolet, Ford etc.)
    6. Vehicle model - (Camaro, Taurus etc.)
    7. Vehicle model year (1979, 1988, etc.)
    8. Inspector signature **(sign only after completing a passing inspection)**
    9. Analyzer; opacity meter registration number or scanner information
    10. Fuel type-"G" for gas, "D" for Diesel (bi-fuel vehicles-see AFV section)
    11. Idle HC readings
    12. Idle CO readings
    13. Loaded cruise HC readings
    14. Loaded cruise CO readings

15. Tampering Air injection system (P or N/A)
16. Tampering Evaporative emissions control system (P or N/A)
17. Tampering Positive crankcase ventilation system (P or N/A)
18. Tampering Catalytic converter (P or N/A)
19. Gas cap functional or visual test (P or N/A) (N/A for "Capless Systems)
20. Engine size (cubic inch or liter)
21. Gross vehicle weight rating **(Actual GVWR of a vehicle certified under federal truck standards)**
22. OBD Test-number of unset readiness monitors (P or N/A)
23. OBD Test-Key On Engine Off MIL status (P or N/A)
24. OBD Test-Key On Engine Running MIL and command status (P or N/A)
25. OBD Test-Tampering Inspection of the Diagnostic Link Connector (P or N/A)
26. **Opac % is used for results of the <u>liquid fuel leak check</u> on a FVIR/MS without a "LL" box numbered <u>27</u> (P or N/A).**
    If the FVIR/MS does have a <u>box 27</u> "LL" then N/A will be entered in this box.
27. LL Liquid Fuel Leak inspection results (P or N/A)
28. Inspector License Number (CF/FD/CFD)

When performing an inspection of a bi-fuel alternative fuel vehicle, use the space for two vehicle inspections, or four lines of the FVIR/MS.

- **On the first line of the inspection record, complete the requested information: certificate serial number, vehicle description, etc…**

- **On the second line of the inspection record, enter the registration number of the analyzer, results of the gasoline exhaust emissions inspection and tampering results; <u>do not sign the inspection record at this time.</u>**

- **On the third line of the inspection record, write in the words "bi-fuel vehicle inspection."**

- **On the fourth line of the inspection record, enter the type of fuel and the results of the alternative fuel exhaust emissions inspection and <u>sign the inspection</u>.**

<u>Note:</u>
When performing an inspection of a vehicle fueled with either compressed or liquefied <u>natural gas</u>, the hydrocarbon (HC) exhaust emissions are multiplied by 0.61 for the corrected HC results.

2. Heavy-duty (8,501 lbs. GVWR and greater) **diesel vehicles:**

1. Certificate of inspection number
2. Inspection date
3. License plate number (if applicable)
4. Vehicle identification number
5. Vehicle make
6. Vehicle model
7. Vehicle model year
8. Inspector signature **(sign only after completing a passing inspection)**
9. Opacity meter registration number
10. Time inspection was performed
11. Ambient air temperature at the time and location of inspection
12. Barometric pressure at the time and location of inspection
13. Relative humidity at the time and location of inspection
14. Opacity reading in percent (after the correction factors in Appendix B of J1667)
15. Engine size (cubic inch or liter)
16. Gross vehicle weight rating
17. Engine year
18. **Stack or exhaust pipe diameter (inches) or Engine Horse Power (HP)**
19. Tampering positive crankcase ventilation (P or N/A)
20. Tampering catalytic converter (P or N/A)
21. Inspector license number (CF/FD/CFD)

Section IX

Procedures for Certificates of Inspection (COI's)
Government Vehicle Certificates of Inspection (GVCOI's)

A. Purchasing COI's or GVCOI's:

To purchase COI's and/or GVCOI's, mail or present a completed order form (see attachments), signed by the fleet agent, along with sufficient payment to The Department.

1. COI's and/or GVCOI's can only be purchased from The Department at the Vehicle Emissions Office (1110 West Washington Street, Phoenix, Arizona 85007) , Monday through Friday from **8:00 a.m. to 4:00 p.m.,** excluding state holidays.

2. Payment for COI's and/or GVCOI's can be in the form of cash or check. If a check is used, the check must be payable to ADEQ;

3. COI's and/or GVCOI's order forms that are incomplete, unsigned by the fleet agent, or unaccompanied by the correct payment will be rejected.

B. General Rules for Issuing a COI:

1. A COI shall be completed and signed by the vehicle emissions inspector performing the inspection at the time the vehicle passes inspection;

2. A COI can only be issued to vehicles that are owned or leased by the fleet;

3. A COI cannot be issued after the date of inspection;

4. A COI must be issued in numerical order;

5. A COI, complete or incomplete, can not be transferred or sold to another fleet station;

6. All unused certificates can be returned to The Department for refund or used in subsequent years.

C. Procedure for Issuing a GVCOI:

1. A GVCOI shall be completed (punched out with the appropriate expiration month and year) by the vehicle emissions inspector performing the inspection at the time the vehicle passes inspection;

2. After the vehicle has passed the inspection, obtain the next GVCOI in numerical order; punch out the appropriate year and month the vehicle is due for its next **inspection (<u>one-year</u> from the month and year of the inspection for all <u>tail-pipe tested</u> vehicles and <u>two years</u> from the month and year of the inspection for <u>OBD</u> vehicles)**; if applicable, remove the previous certificate from the vehicle;

3. Attach the GVCOI to the lower left corner of the rear window, as determined by facing the window outside of the vehicle, unless one of the following exceptions applies:

    a. On vehicles that do not have a rear window, or where the rear window is obstructed, the sticker should be affixed to the lower left corner of the windshield.

    b. Undercover law enforcement vehicles should have the certificate placed in the vehicle's log book or file.

D. Procedure for Issuing a COI:

After the vehicle has passed the required inspection, obtain the next certificate in numerical order and record the following information:

1. Vehicle identification number;

2. Vehicle model year;

3. Vehicle license plate # (if applicable);

4. Name of fleet station;

5. Certificate expiration date **(<u>one year</u> from the date of inspection for <u>tail-pipe test</u> vehicles <u>or two years</u> from the date of the inspection for <u>OBD</u> vehicles);**

6. Inspector license number;

7. Fleet station permit number;

8. Inspector signature.

Errors can only be corrected by the inspector issuing the certificate. The following procedure should be used: Draw a single line through the incorrect information, make the correction, initial the correction using your first initial and last name, and record the date of the correction next to your initials.

E. Lost or Destroyed COI's or GVCOI's:

1. When COI's are discovered lost or stolen, the fleet owner must notify The Department in **writing within 24 hours**. Written notification may be faxed to 602 207-7020; e-mailed to alo@azdeq.gov ; or sent by mail to; ADEQ-VEI at1110 West Washington Street, Phoenix AZ 85007. Indicate the following:

   - The quantity of COI's that were lost or stolen;
   - The serial numbers of the missing COI's.

Failure to properly notify The Department may result in suspension or revocation of the fleet permit.

2. When the original (white) of a completed COI is discovered lost, destroyed or mutilated, a Director's Certificate may be obtained from The Department by **hand delivery** of the following:

   - The second (yellow) copy or third (pink) copy of the lost, destroyed or mutilated COI;
   - The original (white) of the FVIR/MS;
   - A cover letter from the fleet agent explaining the loss, destruction or mutilation of the COI;
   - Sufficient payment.

F. Voided COI's

When the original (white) of the COI is voided by a fleet station, the void must be documented as follows:

1. Record the void on the FVIR/MS;

2. Match the original (white) with the corresponding third (pink) copy and retain it at the fleet station for two-years.

Section X

Procedure for Processing the Certificates of Inspection (COI) & Fleet Vehicle Inspection Report/Monthly Summary (FVIR/MS)

The COI is a triplicate form used to certify that a vehicle has passed the required emissions inspection. The FVIR/MS is a duplicate document that contains the actual inspection record of vehicles inspected by the fleet station. The three copies of the COI and the two copies of the FVIR/MS are to be distributed and/or retained as follows:

- The **original (white) of the COI** is submitted to the Arizona Department of Transportation, Motor Vehicle Division for vehicle registration.

- The **second (yellow) copy of the COI** is submitted to The Department along with the **second (yellow) copy of the FVIR/MS within two weeks after the end of the month** in which the inspections were performed. Forward the documents to The Department at the following address: ADEQ-Vehicle Emissions Inspection and Compliance Unit, 1110 West Washington Street, Phoenix, Arizona 85007.

- The **third (pink) copy of the COI** and the **original (white) of the FVIR/MS** must be **retained by the fleet station for two years after the date of inspection.**

FLEET INSPECTION REQUIREMENTS CHART (*EXCEPT DIESEL VEHICLES*)

GOVERNMENT ENTITY & FLEET SHOP VEHICLES

VEHICLE CLASS GVWR & Type	*TEST TIME Idle/Cruise*	*LOADED CRUISE TEST*	*CURB IDLE TEST W/Foot Brake Applied*	*EQUIPMENT TAMPERIING*	*LIQUID FUEL LEAK*	*GAS CAP TEST*
1967 thru 1974 Model Year Vehicles Including AFV's (See Note) All GVWR	90Sec/90Sec	A/T-Drive* M/T-2nd gear or higher*	A/T-Drive M/T-Neutral	None	None	Visual or Functional w/Evaporative System
1975 thru 1980 Model Year Vehicles Including AFV's (See Note) ALL GVWR	90Sec/90Sec	A/T-Drive* M/T-2nd gear or higher*	A/T-Drive M/T-Neutral	Yes*	Yes	Visual or Functional w/Evaporative System
1981 and Newer Heavy-Duty Vehicles Including AFV's (See Note) 8,501 GVWR or greater	90Sec/90Sec	A/T-Drive* M/ T- 2nd gear or higher*	Neutral	Yes*	Yes	Visual or Functional w/Evaporative System
1967 thru 1974 Constant4WD/Traction System(undefeatable)	30 Sec/None	None	A/T-Drive M/T-Neutral	None	Yes	Visual or Functional w/Evaporative System
1975 and Newer Constant 4WD/Traction System(undefeatable)	30 Sec/None	None	A/T-Drive M/T-Neutral	Yes*	Yes	Visual or Functional w/Evaporative System
1996 and Newer /Light-Duty Vehicles (except Bi-fuel AFVs)	OBD	OBD	OBD	None	None	Functional Gas Cap Test
1981 thru 1995 Model Year Light-Duty Vehicles 1996 and Newer Light Bi-Fuel Vehicles (except Area "A" School District AFVs)	**IM147**	**IM147**	**IM147**	**None**	**Yes**	**Evaporative Pressure Test**

AREA "A" SCHOOL DISTRICTS-ADDITIONAL REQUIREMENT

1981 and Newer Light -Duty AFV's	90Sec/90Sec	A/T-Drive* M/T-2nd gear or higher*	Neutral	Yes*	None	Visual or Functional w/ Evaporative System
1996 and Newer Light-Duty Vehicles	OBD	OBD	OBD	None	None	Functional Gas Cap Test

Note-AFVs=Alternative Fuel Vehicles-Bi-fuel AFVs must receive a test on each fuel

Equipment Tampering Yes* = includes Catalytic Converter/Air Injection System/Evaporative System/ & PCV System inspection
A/T-Drive*/M/T-2nd Gear or Higher * = Do Not use "Overdrive"

<u>Vehicles are to be tested at the following times:</u>

Government entity fleet vehicles must be tested within 12 months after acquisition by the operating entity and <u>*annually (biennially for OBD tested vehicles)*</u> thereafter, during or before the anniversary month of the previous inspection. If the vehicle was exempt from testing when it was acquired, the vehicle must be tested within 90 days after the vehicle becomes subject to testing. Fleet Shop vehicles must be inspected within each 12 month period (or within 24 month period for OBD tested vehicles) following any original registration or re-registration

FLEET INSPECTION REQUIREMENTS CHART (DIESEL)

GOVERNMENT ENTITY & FLEET SHOP DIESEL VEHICLES

VEHICLE CLASS GVWR & TYPE	MPH LOAD APPLIED	EQUIPMENT TAMPERING	GAS CAP TEST
1967 and 1974 Model Year Vehicles **4,000 GVWR or Less**	30 MPH 6.4 TO 8.4	None	Visual
1967 thru 1974 Model Year Vehicles **4,001 to 8,500 GVWR**	50 MPH 28-32	None	Visual
1975 and Newer Model Year Vehicles **4,000 GVWR or Less**	30 MPH 6.4-8.4	Yes*	Visual
1975 and Newer Model Year Vehicles **4,001 to 8,500 GVWR**	50 MPH 28-32	Yes*	Visual
1967 thru 1974 Model Year Vehicles **8,501 GVWR and more**	J1667 Snap-Acceleration Test	None	Visual
1975 and Newer Model Year Vehicles **8,501 GVWR and more**	J1667 Snap-Acceleration Test	Yes*	Visual

Equipment Tampering Yes* = includes Catalytic Converter & PCV System Inspection

Vehicles are to be tested at the following times:
Government entity fleet diesel vehicles must be tested within 12 months after acquisition by the operating entity and *annually* thereafter, on or before the anniversary date of the previous inspection. If the vehicle was exempt from testing when it was acquired, the vehicle must be tested within 90 days after the vehicle becomes subject to testing.
Non-Dealer non-government diesel vehicles must be inspected within each 12 month period following any original registration or re-registration

Approved Gas Cap Test Equipment

The gas cap testers listed below follow the State of Arizona guidelines for the fleet vehicle emissions inspection station gas cap test. In addition to the gas cap tester, a set of gas cap adapters that will fit at least 95% of the subject gas caps is required.

- STANT CORPORATION model numbers
    - 12370 (Manual)
    - 12440 (electric)
-
- Visit the STANT website for more information at:
- http://www.stant.com

- WAEKON CORPORATION model numbers
    - FPT-25XX
    - FPT 27
    - FPT-27-EX1
    - FPT-27-EX1E
    - FPT 2600
    - FPT 2600-EX1
    - EVAP System Master Diagnostic Kit Model #46568
    -
- Visit the WAEKON website for more information at:
- http://waekon.com
-

The following are the most current gas cap test adapter sets available:

- Stant 12409
- Waekon FPT25-07
- Waekon FPT 25-07E
- Waekon-FPT 25-09 I/M Fuel Cap adapter Set
- Waekon-FPT 25-09E I/M Fuel Cap adapter Set
- Waekon-FPT-25-09U (update set)

Non-endorsement of proprietary or other ADEQ reviewed products
The listing by ADEQ of any proprietary product or service is not an endorsement by ADEQ or the State of Arizona. ADEQ does not endorse, represent, guarantee, warranty or defend the use of any of the products or services you voluntarily sign up to provide information on, use, or receive. These product and service providers are a direct source unrelated to ADEQ or the State. Use of any listed product or service is at your risk and the State assumes no liability.

Stant Bulletin

1620 Columbia Avenue
Connersville, IN 47331-1696
765-825-3121

To: Customers and All Sales Representatives
From: Stant Corporation
Subject: Fuel System and Cap Testers
Date: January 12, 2011

Stant has been in the fuel system and cap tester business for many years. Unfortunately our supplier of the 12260 vacuum tester, 12606 vacuum tester adapter kit, 12265 fuel system tester and 12441 electronic fuel cap tester can no longer economically supply parts or testers to us. Due to this fact we will only be able to offer these testers while our current inventories last.

Once our existing inventories are exhausted, the following testers will no longer be available:

- Stant #12260, NAPA #700-1067, Carquest #46660
- Stant #12606, NAPA #700-1362, Carquest #46606
- Stant #12265, NAPA #700-1067, Carquest #46665
- Stant #12441, NAPA #12441, Carquest #12441

Stant will continue to offer the 12301 fuel system tester and all the fuel cap tester adapters. Stant will also continue to offer cooling system pressure testers and adapters.

We thank you for your continued support and loyalty over the years. We assure you we at Stant will continue to supply you with the finest quality closure caps, thermostats, testers, and tester adapters available.

Stant Bulletin

To: All Customers and Sales Representatives
From: Stant Corporation
Subject: Fuel Cap Tester
Date: June 4, 2012

Fuel cap tester 12301 and the assortments (12370, 12470 and 12570) that include this part are discontinued. We have been unsuccessful in finding an affordable replacement.

Waekon Products has a fuel cap tester that includes an adapter to use Stant adapters. You can find more information at http://www.hickok-inc.com/customercare/wheretobuy.html or call them at 1-800-342-5080 and ask about their 45964 OBD II Fuel Cap Tester.

Stant will continue to supply adapters for fuel cap testers. These adapters remain available and will continue to be updated.

ADEQ
Arizona Department of Environmental Quality

Air Quality Vehicle Emissions

ORDER FORM

FLEET NAME:	FLEET NUMBER:	
ADDRESS:	QUANTITY ORDERED:	
CITY:	PHONE NUMBER:	ZIP CODE;
ENCLOSED: CHECK AMOUNT #	CHECK NUMBER #	
(PRINT) AGENT NAME: AGENT SIGNATURE:	(PRINT) RUNNER NAME: RUNNER SIGNATURE:	

☐ CERTIFICATE OF INSPECTION

☐ GOVERNMENT VEHICLE CERTIFICATE OF INSPECTION

Instructions for ordering:

1. **Complete order form above.**
2. **Check the box for the type of certificate ordered.**
3. **Fleet Agent must sign authorizing the purchase.**
4. **Name of the person picking up the order if other than Fleet Agent.**
5. **Include sufficient payment ($11.50 per certificate, packs of 25)**
   Make checks or money orders payable to: ADEQ
6. **Bring the completed order form and payment to either of the two ADEQ offices whose addresses are listed below.**

NOTE: Incomplete orders signed by other than Fleet Agent will be denied and returned. No orders after 4:00PM

FOR OFFICIAL USE ONLY

AGENTS SIGNATURE:	FLEET APPROVAL:	DATE:	VERIFIED BY:	# OF PACKETS:
START NUMBER:	END NUMBER:		START NUMBER:	END NUMBER:
START NUMBER:	END NUMBER:		START NUMBER:	END NUMBER:
START NUMBER:	END NUMBER:		START NUMBER:	END NUMBER:
START NUMBER:	END NUMBER:		START NUMBER:	END NUMBER:
START NUMBER:	END NUMBER:		START NUMBER:	END NUMBER:
START NUMBER:			END NUMBER:	
DATE ISSUED:			DATE MAILED:	
CASHIER:			NUMBER OF PACKETS ISSUED TO FACILITY:	
RUNNER SIGNATURE VERIFIED NUMBER OF PACKETS ISSUED:				

1110 West Washington Street, Phoenix, Arizona 85007, (602) 771-3950
4040 East 29th Street, Tucson, Arizona, 85711, (520) 628-5651
Visit the Department's Web Site at http://www.azdeq.gov/environ/air/vei/index.html

ADEQ
Arizona Department of Environmental Quality

Air Quality Vehicle Emissions

FLEET AGENT DESIGNATION FORM

Return completed Designation form to:

Vehicle Emissions Inspection
1110 West Washington Street
Phoenix, AZ 85007

OR

Vehicle Emissions Inspection
4040 E. 29th Street
Tucson, AZ 85711

Type/Print Name & Title of Designated Fleet Agent: _____

Type/Print Name & Title of Designated Fleet Co-Agent: _____

is/are employed by the fleet station and accept the responsibilities of the administration and the day-to-day operation of my Fleet Emissions Inspection Station. I understand that as the owner or corporate officer, I retain full responsibility for assuring said fleet station is operated in accordance with applicable state laws and duly adopted Rules of the Department.

I also understand that having designated agents, I must:

1. Employ the person named as the fleet agent.
2. Immediately notify the Department by telephone and within seven days in writing of any changes in the employment status of designated fleet agent.
3. Cease fleet inspections if designated fleet agent leaves my employment.
4. Not resume fleet inspections until the fleet agent requirements have been met.

Signature of Fleet Applicant/Owner/Corporate Officer: _____

Type/Print Name & Title of Fleet Applicant/Owner/ Corporate Officer: _____

I herewith accept the responsibilities for the administration and the day-to-day operation of:

Type/Print Fleet Name: _____ Permit No. #_____

Signature of Fleet Agent: _____ License #:_____Exp Date:_____

Signature of Fleet Co-Agent:_____ License #:_____Exp Date:_____

Fleet Agent E-Mail Address: _____ Co-Agent E-Mail Address:_____

Rev-3-07

AREA "A" METRO PHOENIX GOVERNMENT & FLEET SHOP
NON-DIESEL VEHICLE MAXIMUM ALLOWABLE EMISSION STANDARDS (CUT POINTS)

ENGINE	YEAR	GVWR	NUMBER OF CYLINDERS	IDLE MODE		LOADED CRUISE	
				HC (PPM)	CO (%)	HC (PPM)	CO (%)
4 - Stroke	1980 and newer	8500 or less	All	220	1.20	220	1.20
4 - Stroke	1979 and newer	8501 or more	All	300	4.00	300	3.00
4 - Stroke	1979	8500 or less	4 or less	220	2.20	220	1.65
4 - Stroke	1979	8500 or less	More than 4	220	2.20	220	1.50
4 - Stroke	1975-1978	6000 or less	4 or less	250	2.20	250	1.65
4 - Stroke	1975-1978	6000 or less	More than 4	250	2.00	250	1.50
4 - Stroke	1975-1978	6001 or more	All	350	4.00	350	3.00
4 - Stroke	1972-1974	All	4 or less	400	5.50	400	4.20
4 - Stroke	1972-1974	All	More than 4	400	5.00	400	3.75
4 - Stroke	1967-1971	All	4 or less	500	5.50	500	4.20
4 - Stroke	1967-1971	All	More than 4	450	5.00	450	3.75
4 - Stroke	Reconstructed 1981 and newer	All	All	1,200	7.50	700	5.25
4 - Stroke	Reconstructed 1980 and older	All	All	1,200	7.50	1200	5.60
2 - Stroke Car	All	All	All	18,000	5.00	18,000	5.00

AREA "A" METRO PHOENIX
MAXIMUM ALLOWABLE DIESEL OPACITY STANDARDS (CUT POINTS)

▼	MODEL YEAR	GVWR	Dynamometer Loaded Mode Horsepower	Vehicle Speed	Loaded Mode Opacity	▼
	1967 and newer	4000 or less	6.4 - 8.4	30 MPH	20%	-
	1967 and newer	4001 to 8500	28 - 32	50 MPH	20%	-
ENGINE YEAR		**GVWR**				**SAE J-1667 Opacity**
1967 - 1990		8501 or more	-	-	-	55%*
1991 & Newer		8501 or more	-	-	-	40%*

* Standards are based on Area Elevation
* Except engines identified by C.A.R.B. Technical Bulletin MSD-NGDDS-96-006

Heavy-Duty Vehicle Inspection Program

Technical Bulletin
(Ref. No.: MSD-NHDDS-96-006)

This page updated August 5, 1998.

The following is a listing of approved exempted heavy-duty engines pursuant to section 2182(e) of Title 13 California Code of Regulations:

Engines Exempted to Higher Opacity Cutpoints			
Manufacturer	No. of Engine Families	Exempt/App. Opacity	Model Years
DDC (1)	6	75%	1987-90
Hypermax (2)	2	75%	1985-91
Caterpillar (3)	2	70%	1989-90
Cummins (4)	1	75%	1988-92

(1) Series 60 DDEC I and DDEC II engine families. DDC is upgrading these engines, by recalibrating the on-board electronic controls during routine maintenance, to comply with the applicable cutpoint.

(2) This exemption applies to an aftermarket parts turbo-charger installation.

(3) Model 3176 electronic engines.

(4) L-10 engine family-CPL 1226.

These exemptions will be reviewed by ARB staff subsequent to the adoption of the new SAE J1667 specifications into regulations as required by AB 584 of 1993 (HSC 44011.6 et seq.). For further information, contact Don Chernich at (916) 322-7061 or Darryl Gaslan at (626) 450-6158.

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Mobile Source Program

A department of the California Environmental Protection Agency

Diesel Manufacturer Websites & Phone Numbers

Detroit Diesel: http://www.detroitdiesel.com/Support/Service_Support/index.asp
Phone: (732) 926-9622

International/Navistar: http://www.navistar.com/site_layout/engine/index.asp
Phone: (800) 448-7825

Mack: http://www.macktrucks.com/default.aspx
Phone # (602) 258-4500

Caterpillar: http://www.cat.com
Phone: (800) 343-7357

Renault: http://www.renault-trucks.com
Phone: (602) 258-4500

Volvo: http://www.volvo-truck.com
Phone: (800) 343-7357

Cummins: http://www.cummins.com/na/pages/en/index.cfm
Phone: (602) 257-5927

In some cases, it may be possible to modify or retrofit an engine to meet the 1988 model year engine standard.

For information regarding retrofits that have been certified by EPA, visit the following website:
HTTP://WWW.EPA.GOV/OTAQ/RETROFIT/RETROVERIFIEDLIST.HTM

For information regarding retrofits certified by CARB, visit the following website:
HTTP://WWW.ARB.CA.GOV/DIESEL/VERDEV/VERDEV.HTM

Fleet Vehicle Inspection Report/Monthly Summary Legend

CERT. OF INSPECTION	DATE	LIC. PLATE	VIN	MAKE	MODEL	YR	INSP. SIGNATURE
1	2	3	4	5	6	7	8

EQUIPMENT #	FUEL	IDLE HC	IDLE CO	2500 HC	2500 CO	A.I.S	EVAP	PCV	CAT.	CAP	CID/L	G.V.W.	READY	KOEO	KOER	DLC	OPAC %	INSP. NO.
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27

1. CERT. OF INSPECTION - Certificate of Inspection (COI) Number, or Government Vehicle Certificate of inspection (GVCOI) used in numerical order.
2. DATE - Date the vehicle passed inspection.
3. LIC. PLATE - Arizona license plate number or NP for no plate.
4. VIN - Vehicle identification number obtained from the vehicle (verified in two places).
5. MAKE - Make; manufacturer, such as; Ford, GM, Toyota, etc.
6. MODEL - Model; Camaro, Taurus etc...
7. YR - Model year as stated on the title or registration.
8. INSP. SIGNATURE - Signature of the inspector who performed the inspection.
9. Equipment # - the registered infra-red analyzer number or opacity meter number assigned by the Department.
10. Fuel - Type of fuel the vehicle was tested on. Enter: "G" for gasoline; "P" for propane; "D" for Diesel; "C" for natural gas (compressed or liquefied).
11. IDLE HC - Idle HC emissions.
12. IDLE CO - Idle CO emissions.
13. 2500rpm HC - 2500rpm HC emissions or N/A when the inspection is not applicable.
14. 2500rpm CO - 2500rpm CO emissions or N/A when the inspection is not applicable.
15. AIS - Tampering inspection results of the Air Injection system. Enter "P" for Pass or N/A when the inspection is not required.
16. EVAP - Tampering inspection results of the Evaporative Control system. Enter "P" for Pass or N/A when the inspection is not required.
17. PCV - Tampering inspection results of the Positive Crankcase Ventilation system. Enter "P" for Pass or N/A when the inspection is not required.
18. CAT. - Tampering inspection results of the Catalytic Converter(s). Enter "P" for Pass or N/A when the inspection is not required.
19. CAP - Pressure test or visual inspection results of the gas cap(s). Enter "P" for Pass or **N/A when the inspection is not required or when the vehicle is designed with "NO CAP"**
20. CID/L - Engine size, either in cubic inch displacement (CID), or liters (L)
21. GVW - Gross vehicle weight rating as established by the manufacturer, **on a vehicle certified under federal Truck standards.**
22. READY - Vehicle ready to test with the appropriate number OBD readiness monitor set. 1996 through 2000 model year vehicles-2 or less. 2001 and newer vehicles-1 or less. Enter "P" for Pass or N/A when the inspection is not required.
23. KOEO - Results of the OBD Key "On" Engine "Off" test. Enter "P" for Pass or N/A when the inspection is not required.
24. KOER - Results of the OBD Key "On" Engine Running test and the results of the MIL Commanded On test. Enter "P" for Pass or N/A when the inspection is not required.
25. DLC - Tampering inspection results of the Diagnostic Link Connector. Enter "P" for Pass or N/A when the inspection is not required.
26. **OPAC % - Percentage of opacity (light-duty diesel vehicles) or**
    - ✓ This box will be used for the results of the "Liquid Fuel Leak Test", Enter "P" for Pass, on the applicable vehicles.
27. INSP. NO. – Emissions inspector's CF or CFD license number issued by the Department

Fleet Vehicle Inspection Report/Monthly Summary Legend

CERT. OF INSPECTION	DATE	LIC. PLATE\	VIN	MAKE	MODEL	YR	INSP. SIGNATURE
1	2	3	4	5	6	7	8

EQUIPMENT #	FUEL	IDLE HC	IDLE CO	2500 HC	2500 CO	A.I.S	EVAP	PCV	CAT	CAP	CID/L	G.V.W.	READY	KOEO	KOER	DLC	OPAC %	L.L	INSP. NO
9	10	11	12	13	14	15	16	17	18.	19	20	21	22	23	24	25	26	27	28

1. CERT. OF INSPECTION - Certificate of Inspection (COI) Number, or Government Vehicle Certificate of inspection (GVCOI) used in numerical order.
2. DATE - Date the vehicle passed inspection.
3. LIC. PLATE - Arizona license plate number or NP for no plate.
4. VIN - Vehicle identification number obtained from the vehicle (verified in two places).
5. MAKE - Make; manufacturer, such as; Ford, GM, Toyota, etc.
6. MODEL - Model; Camaro, Taurus etc...
7. YR - Model year as stated on the title or registration.
8. INSP. SIGNATURE - Signature of the inspector who performed the inspection.
9. Equipment # - the registered infra-red analyzer number or opacity meter number assigned by the Department.
10. Fuel - Type of fuel the vehicle was tested on. Enter: "G" for gasoline; "P" for propane; "D" for Diesel; "C" for natural gas (compressed or liquefied).
11. IDLE HC - Idle HC emissions.
12. IDLE CO - Idle CO emissions.
13. 2500rpm HC - 2500rpm HC emissions or N/A when the inspection is not applicable.
14. 2500rpm CO - 2500rpm CO emissions or N/A when the inspection is not applicable.
15. AIS - Tampering inspection results of the Air Injection system. Enter "P" for Pass or N/A when the inspection is not required.
16. EVAP - Tampering inspection results of the Evaporative Control system. Enter "P" for Pass or N/A when the inspection is not required.
17. PCV - Tampering inspection results of the Positive Crankcase Ventilation system. Enter "P" for Pass or N/A when the inspection is not required.
18. CAT. - Tampering inspection results of the Catalytic Converter(s). Enter "P" for Pass or N/A when the inspection is not required.
19. CAP - Pressure test or visual inspection results of the gas cap(s). Enter "P" for Pass or **N/A when the inspection is not required or when the vehicle is designed with "NO CAP"**
20. CID/L - Engine size, either in cubic inch displacement (CID), or liters (L)
21. GVW - Gross vehicle weight rating as established by the manufacturer, **on a vehicle certified under federal Truck standards.**
22. READY - Vehicle ready to test with the appropriate number OBD readiness monitor set. 1996 through 2000 model year vehicles -2 or less. 2001 and newer vehicles-1 or less. Enter "P" for Pass or N/A when the inspection is not required.
23. KOEO - Results of the OBD Key "On" Engine "Off" test. Enter "P" for Pass or N/A when the inspection is not required.
24. KOER - Results of the OBD Key "On" Engine Running test and the results of the MIL Commanded On test. Enter "P" for Pass or N/A when the inspection is not required.
25. DLC - Tampering inspection results of the Diagnostic Link Connector. Enter "P" for Pass or N/A when the inspection is not required.
- ✓ OPAC % - Percentage of opacity (light-duty diesel vehicles)
27. **The results of the "Liquid Fuel Leak Test", Enter "P" for Pass on applicable vehicles.**
28. INSP. NO. – Emissions inspector's CF or CFD license number issued by the Department.

Diesel Fleet Vehicle Inspection Report/Monthly Summary Legend

CERT. OF INSPECTION 1	DATE 2	LIC. PLATE 3	VIN 4	MAKE 5	MODEL 6	YR 7	INSP. SIGNATURE 8

EQUIPMENT # 9	TIME 10	TEMP 11	BARO 12	HUMIDITY 13	OPACITY% 14	CID/L 15	G.V.W. 16	ENG YR 17	STACK 18	PCV 19	CAT. 20	INSP. NO. 21

1. CERT. OF INSPECTION - Certificate of Inspection (COI) Number, or Government Vehicle Certificate of inspection (GVCOI) used in numerical order.
2. DATE - Date the vehicle passed inspection.
3. LIC. PLATE - Arizona license plate number or NP for no plate.
4. VIN - Vehicle identification number obtained from the vehicle (verified in two places).
5. MAKE - Make; manufacturer, such as; Bluebird, Isuzu, Ford
6. MODEL - Model; such as; 4200S, NPR, F800
7. YR - Model year as stated on the title or registration.
8. INSP. SIGNATURE - Signature of the inspector who performed the inspection.
9. Equipment # - the registered opacity meter number assigned by the Department.
10. TIME - Time of day the inspection is conducted.
11. TEMP - Temperature at the time of the inspection.
12. BARO - Barometric pressure at the time of the inspection.
13. HUMIDITY – Relative Humidity at the time of the inspection.
14. OPACITY% - The opacity % after the correction factors in Appendix B of J1667 are utilized.
15. CID/L - Engine size, either in cubic inch displacement (CID) or liters (L).
16. G.V.W. - Gross vehicle weight rating as established by the manufacturer.
17. ENG YR - Year of the engine; obtained from the engine label.
18. **STACK - Diameter of the exhaust pipe or stack, measured in inches, or Engine Horse Power (HP)**
19. PCV - Tampering inspection results of the Positive Crankcase Ventilation system. Enter P or N/A.
20. CAT. - Tampering inspection results of the Catalytic Converter(s). Enter P or N/A.
21. INSP. NO. - Emissions inspector's FD or CFD license number issued by the Department.